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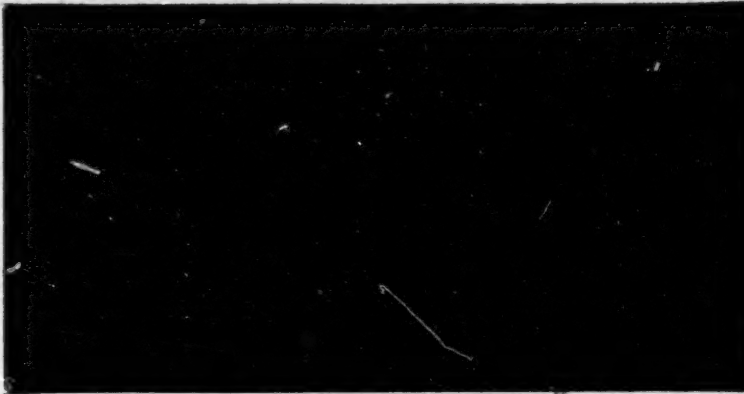
ABSTRACT

The information systems of nontraditional education are examined. Case studies illustrate the variation in nontraditional programs: Open University of Pennsylvania, British Open University, Prince George's County Library (Maryland), University Without Walls--Skidmore, Empire State College--Saratoga, Minnesota Metropolitan State College, and Cambridge Public Library. After this, public libraries, academic libraries, noncampus degree students, and new technology are discussed. Conclusions and recommendations about these new developments with libraries are made. (WH)

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**INFORMATION SYSTEMS FOR NONTRADITIONAL
STUDY**

THE STATE-OF-THE-ART

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1. Generalizations

The excitement generated by new and dramatic educational models often overshadows the ancillary fields that may make or break a new system. Similarly, those professionals associated with these ancillary fields too often assume the role of either "johnny-come-latelies," or, worse, assume a studied indifference to these innovations (their argument being that the type of innovation has little bearing on their field).

In part, this appears to be taking place among some of the planners in the information systems field. (For the sake of this discussion, we can assume that an "information system" can range from an answer supplied by a reference librarian to a highly sophisticated, machine-based system. Either old techniques and services are considered perfectly adequate to cope with nontraditional methods of education, or else the responsibility for supplying the information service is shunted off to other groups.

Ideally, the concept of nontraditional education

ought to engender, for the information systems planner, wonderful fantasies in the extreme of the 21st century, both with respect to philosophy and the new technologies required to implement these dreams. One such concept might embrace the idea that the information center must be the focal point for nontraditional education. The concept of the library, for example, as an educational institution has long been recognized (e.g., the "people's university" of the 19th century; the Library-College movement). Carrying this thought one step further, through the decades, select members of the library field have urged their membership to divest themselves of their traditional bibliographic-custodial role and to assume a quasi-instructional role. (Arguments against this philosophy have been the usual ones: if librarians wanted to teach, they would have gone into education instead of librarianship).

Nonetheless, the remainder of the 20th century will probably see selected libraries become credit- or even degree-granting institutions, with mentor-librarians residing therein, assuming that educators may relax some of their regulations, albeit sacrosanct ones, and information people accept their responsibility as educators.

The Cambridge Public Library offers an example of the dramatic potential available when a cadre of educators can be wedded to a corps of librarians. Despite the fact that Cambridge represented an application, without necessarily having supplied the rationale nor having realized the theory behind such motivation (see discussion of CPL, below), this fortuitous joining of forces is extremely logical for nontraditional education.

Below are discussed some of the programs as either reviewed in the literature or institutions visited as well as some of the problems to be anticipated and pitfalls to be avoided. A brief discussion of implications of new technologies and a few suggestions on some areas that bear further investigation are also included.

Prior to this discussion, let us examine some basic models of the structure of nontraditional schools in relation to information delivery systems. Although other writers have identified many models of the Non-Campus Degree Granting Institutions, as we examined these schools in relation to information delivery systems we felt it would be easy to categorize them in three basic models.

The first model is one in which the administrators or creators of the program have based their design on the assumption that there is a common body of knowledge, which, when assimilated, would provide certification for the student. This model is epitomized by the Open University in Great Britain, Chicago's TV College, and other schools that have adopted this program. In preparing their course of study, the creators of the institution identify those courses that a student should take in order to complete his program and then have course materials designed that students can follow independently, or that can be presented through the use of mass media, such as the current television networks. At the conclusion of the various presentations, the student is examined to ascertain his ability to remember and recall the identified and presented material. If this recollection is satisfactory, the student receives credit for that unit of work and continues on to the next.

The third model (the second will be explained following this description) is that in which its creators have assumed that an information-rich society can no longer identify a common base of knowledge, the assimilation of which would render a person "educated." This

model establishes a body of personal advisors who meet with the student, and together with the student, identify those knowledge areas in which the student should develop competency in order to consider himself educated and receive his credentials. This model could very well be operating with a completely unique program for every student enrolled. The content of the education in this model, therefore, does not lend itself to "canning" or presentation through various forms of mass media.

The second model falls into a broad spectrum of institutions that operate on a combination of the first and third models. The creators of these institutions assume that there is some knowledge that is common to students educated in a particular area, but then go on to say that beyond this common knowledge there is a broad spectrum of knowledge that fits the students unique characteristics and goals. Examples of this second model might be the Empire State College in New York State and many University Without Walls Programs functioning within the consortium of experimental universities. The third model seems to be growing in popularity and probably is best exemplified in the Minnesota Metropolitan State

College in St. Paul and the Campus Free College in Cambridge, Massachusetts.

2. Programs

Task Force--Open University--Department of Education, Commonwealth of Pennsylvania

Open hearings were held by a task force studying the feasibility of the Open University in Pennsylvania. It was gratifying to note that representatives of the library community (both public, academic, as well as special) flocked to these sessions and requested that their special interests be heard. In essence, the statement was made during a session attended in Bethlehem in Spring 1973 that the library community welcomed and embraced the concept of the external degree program, and that services were well within the framework, having undertaken requirements of students of varying levels of sophistication for many years.

The library lobby felt that the Task Force should understand most clearly, however, that 1) funding for libraries should be a supreme consideration for any type of open university program and 2) that library representation be included on the planning board from the

very beginning. Conversations among librarians also brought out the statement that, philosophically, they agreed that a new dimension must be added to librarianship--one that viewed a changing role from custodial to educational. How this role was to be implemented was not resolved.

Agreement was unanimous that library cooperation via regional consortia, networking, etc., would be paramount to the success of any program, and that these should be strengthened within the state.

Discussions of new technologies centered on the video cassette (computer-based operations for the smaller libraries still considered far too costly). Most of the librarians present seemed to feel that their users would have little objection to the use of any form of media, provided that no alternatives were offered. Generally, the user seeking information was gratified in obtaining it when needed and in whatever format it was available at that time. Given a choice, however, the user's preference usually turned out to be traditional, namely hard copy.

Whether this group implements the ideas to which they are presently paying lip service remains to be seen.

British Open University

(No attempt is made to describe this well-known system.)

Structured, semi-structured, or unstructured, all information systems connected with noncampus degree programs could benefit from a study of the OU system for a number of reasons:

- 1) It has the largest number of students to be studied (over 40,000 in 1973);
- 2) It has been operational for three years;
- 3) It has produced one of the first (if not the first) user studies of its student population (1973);
- 4) It has developed an Open University Library geared to the needs of its faculty and tutors; moreover, the library proposes to provide selective dissemination of information (SDI), as well as other special services to its faculty;
- 5) It has disseminated information about its programs, instructional materials, and its reading lists to all libraries in the country through

the Library Association Record (the main professional library journal in Great Britain);

- c) Tutorial sessions on how to use a library are being sponsored during OU summer sessions at universities.

It should be evident from the above that the OU, despite the fact that it does not provide a library for its students, nonetheless considers library services and resources vital in its programs. Moreover, the OU Library proper has recognized that its faculty and tutors also have special information needs and attempts to accommodate these.

Some of the results of the OU study of student usage of libraries merit examination:

- 1) Over 95 percent of all students polled had access to public libraries;
- 2) The majority of students who used the library borrowed from the public library for supplementary material (other libraries available were: college, technical, special; university library usage was very limited);
- 3) The majority of students who used the public library felt that their needs had been served adequately;

- 4) Usage of the library was spotty--i.e., some students relied on the encyclopedia as their supplementary reading;
- 5) Use of microform was negligible.

It is also clear from the above that a number of other user studies could, and probably will, be generated from this group, and that some of their results will have strong validity in other noncampus degree studies.

Prince George's County Library--
University of Maryland (OU)

The University of Maryland adopted the "humanities" package (first year) of the British Open University in toto. It is not certain whether media are employed. Although only a small number of participants was expected, well over 300 students signed in the initial enrollment.

The Prince George's County Library has made its facilities and resources available to these students, including rooms for class sessions, coffee, and warm and enthusiastic support to the students in the program. As with the British Open University, this public library is not funded by any agency, but finances whatever resources are required from its own till. Thus, limitations are imposed on the program somewhat. Apparently an energetic

library staff makes substitutions in the OU reading lists and provides whatever is available in the library system.

A detailed report of their first year's success is in the making and will be available shortly.

University Without
Walls--Skidmore

University Without Walls--Skidmore can certainly be described as an enthusiastically run, albeit small and less-than-adequately funded operation. The director has made some interesting points regarding library resources. He noted that UWW, in recognizing the serious need for library material, paid the Skidmore library \$10 per student in support of their services. The same services available to regular students can be provided to UWW. These services were not specified.

University Without Walls maintains good relations with the library director, and their rapport, so to speak, had gone as far as the purchase of selected A-V equipment for the library out of University Without Walls money.

The director indicated that there were about 100 students enrolled in the program, most of them from New York State, and a good percentage from that immediate

area. Thus, the Skidmore library was in easy accessibility to a fair-sized majority of students. Those students needing information who were not close at hand generally funneled their requests through the University Without Walls office, which in turn, negotiated with the Skidmore Library.

Empire State College--Saratoga

Two interviews were conducted at Empire State: one with an administrative assistant-mentor (and formerly a librarian): one with the Dean. The main thrust of Empire appeared to be prepackaged modules (consisting largely of guided reading and bibliographies on selected subject matter).

From a library standpoint, an interesting facet that developed from these interviews was that Empire State counted on the vast resources of the SUNY system to procure material for students, as needed.

It also suggested that each learning center would have a reading-room library (the composition and the funding of which appeared to be vague). The Dean said that Empire State--Saratoga may eventually become the union media center for tapes, etc., for the entire SUNY system.

The director added that they had no problems concerned with students needs for material. As a matter of fact, he said that they had been approached by the SUNY-Albany library for funds for the new student group. A study revealed that usage of the SUNY-Albany library by the Empire State students was negligible, and that the request had no basis.

Empire State seems to be growing by giant steps and certainly exists as one of the best-funded efforts observed.

Minnesota Metropolitan
State College

This college is a unique, but extremely well-planned institution, which we visited while we were in Minneapolis looking at cable systems. Started in 1971, following the authorization of the Minnesota legislature, the institution has been operating with students since February, 1972. One of the unique features of this college, is the fact that students are not admitted until their normal third year of college or unless they can show competencies equal to that of the first two years of college education. M. M. S. C., as it is known, is growing very rapidly and enjoys the fact that it has a student body

limited to a fairly large metropolitan center. This permits the faculty close and continued communication with students without great cost. Two communications systems are used extensively, the narrow band telephone system and the U. S. postal system. The college has a relatively small suite of offices in the city of St. Paul, but utilizes resources throughout the Minneapolis-St. Paul metropolitan area for the conduct of its educational programs. By using the word "facilities" here, investigators refer to both human and physical resources. The college has received recognition as a candidate for accreditation through the North Central Association of Colleges and Secondary Schools. There is not a formal information system in the structure of the M. M. S. C., and the administrators of the college did not see cable TV or other mass communication systems as a desirable method of content presentation. Administrators indicated that the students were using the public library system as their primary source of information. Investigators would like to recommend that in view of the fact that this seems to be the primary source of information in these private and public noncampus degree granting

institutions there should be further investigation focusing on this planned use of public library facilities and the impact on public libraries. At the time of our study, these institutions were too new and the student bodies too small for any data to be developed. There may be pending, however, a collision course between the institutions of higher education that do not see the need for the development of an information system and the public libraries with their limited resources, who may, by default, have to serve this emerging population of students. Perhaps some careful evaluation and prior planning could eliminate, or at least modify, a major pending confrontation.

Cambridge Public Library

The Cambridge Public Library is a curious combination of educational forces joined with traditional librarianship in a somewhat haphazard liaison. The situation that appears unique (as compared, say, to the Independent Study Program of the Dallas Public Library with Southern Methodist University) is that the educators work under the aegis of the library, rather than having a library providing supplementary services to an educational institution.

The actual facts at Cambridge, however, indicate that there has been no real planning, but that these two groups formed a fortuitous alliance at the right time. A tutorial group (formerly funded by a Model Cities Program) teaches English as a second language to a variety of neighborhood ethnic groups, teaching assistants being employed from these minority groups. The teachers are housed in a building owned by CPI, and the program is ostensibly sponsored by CPL.

Each group identifies with their roles, without overlapping boundaries, and services to each other are incidental. (For example, a small browsing library in the educational center contained such a conglomerate of material that it was evident that it was neither supplied nor maintained by CPL).

The potential of setting up the library as a credit-granting institution may be greater in noncampus degree programs than anticipated.

3. Discussion

A number of questions come to mind from the foregoing report.

Public Libraries

It is evident that the chief burden for provision of library services to the noncampus degree student (regardless of program) rests with the public library. Similarly, a degree-granting program through these institutions may also generate more noncampus degree students out of the public library clientele.

What type of funding will become available, and how will these funds be administered? (Funds for all types of activities are required: new acquisitions; technical processing in support of these acquisitions; additional equipment, particularly for those libraries that have never catered to a student clientele; networking; instructional materials, no matter what medium, etc.; general administration).

What will be the role of state libraries in providing leadership to their member public libraries? A number of activities need to be strengthened:

- 1) Regional, state, local cooperation and consortia need to be developed fully and to be supported;

- 2) Information and training in the usage of new technologies has to be provided;
- 3) Information about every noncampus degree program in the state (including reading lists), should be disseminated to every public library. (The British OU publicized well enough its supplementary bibliographies and programs, such that their public libraries were at least forewarned of the onslaught.);
- 4) Training needs to be provided to small public libraries, particularly those with nonprofessional staffs, in the use of instructional resources;
- 5) Most important, models of successful systems concerned with information for noncampus degree programs need to be replicated within their respective states or regions.

The condition that needs to be avoided at all costs is to have public libraries adopt the attitude that service to noncampus students is an onerous task. This situation could easily arise through lack of funding. To repeat: libraries need to do more than exude warmth and provide a friendly atmosphere and serve coffee. They need funding.

Academic Libraries

Institutions with existing libraries ought to be able to handle, within their own framework, the noncampus student. The real question is whether the library will consider them "special," and, accordingly, design special services for this group or whether the student becomes, in fact, the stepchild of the institution. (For example, would a busy academic library necessarily supply the instruction and orientation to the user who missed out when the regular tours for resident students were being organized? If requests are channeled to the library from, say, a University Without Walls office, would the library be apt to provide the same caliber service to that student as to the persistent student on the premises?

It was also noted earlier that the British Open University provided services to their faculty that did not necessarily arise from faculty requests. Would libraries serving University Without Walls interests, for example, take the same initiative and supply the same gratuitous types of services?

Nature of Noncampus
Degree Students

It is evident that the majority of these students are highly motivated, mature individuals. As such, they have (or ought to have) far greater need for information resources than the average student participating in highly structured course work that relies largely on the textbook.

It is also evident that the majority of programs offered in this country still lean toward the humanities/ social sciences; and the bulk of these rely on the bibliography packet or reading list. Moreover, in some of these programs, the students themselves are expected to prepare their own reading lists.

Such activity on the part of the student immediately begs the question whether these students are so conversant with the literature of their field that they can provide sophisticated bibliographic work worthy of their attention for the next several months, or whether this is simply developed from a haphazard collection based on the skimpy holdings of a small resource center.

It would appear that students of this ilk need to be made aware, in some manner, of the wealth of

bibliographic resources available to them, no matter what the field. (How this instructional program is achieved is still secondary to the need.)

As stated, the majority of the noncampus degree students are motivated and mature. What considerations will be given to another crop of students who lack the above characteristics and who, accordingly, are totally lacking in knowledge of any type of information resources? (A complaint of the British OU staff was that too many of their students used the encyclopaedia for secondary material.)

The bulk of course work currently offered in this country is still at the undergraduate level. What consideration has been given to the fact that these first-generation students may subsequently seek advanced degrees, accompanied by highly sophisticated literature requirements? (It is significant to note that the Director of the Campus Free College suggested that should students come along who required resources beyond those accessible to them via the CFC program and their own initiative, they might be deterred from participating in that particular program.) Lastly, it should be the serious concern of the administrators of noncampus degree

programs that their students should not be short-changed. Traditionally, college libraries have not only served the curricular requirements of their institutions, as well as faculty and student needs, but have also attempted to enrich the undergraduate educational process. Attempts are always made to instill in the student a life-long love of reading, of learning, of self-education and, thus, a view of the library as an alternative resource in their education. To this end, services in the college library have been geared to promote reading in a variety of ways. (Techniques are well known and will not be elaborated on here.)

In part, the above mission is another reason why standards (quality, size of collection, etc.) are maintained for accredited institutions, with the hope that browsing through the wealth of resources in a first-class library would stimulate the student. (Would comparable browsing in the reading rooms of Empire State achieve the same purpose? Would the student with hitherto little or no exposure to a sophisticated library system necessarily enlarge this facet of his educational process?) Good library habits must be taught.

New Technologies

Emerging technologies in connection with information systems can be looked at from two viewpoints: that of the system and the user.

If, as promised by the technologists, computer costs will halve in the next five years, and if computer terminals become as ubiquitous as the telephone, then automated procedures for the processing and dissemination of information will be commonplace, if they are not already.

A number of the tasks in running information systems, if considered by modules, have been successfully developed. Automated acquisitions and circulation programs have been economically viable in a wide host of libraries for several years. Thanks to the development of the MARC II tapes (machine readable cataloging, produced by the Library of Congress), and such consortia as OCLC (Ohio College Library Center) and NELINET, to name but two, the concepts of the on-line catalog and shared cataloging have also been made viable.

Developments in the handling of large files, and the subsequent information retrieval by computer, have spawned a large number of systems, both from universities

and commercial outfits, the services of which are no longer prohibitively expensive, but within the range of the serious researcher.

Developments in the joining of technologies, such as COM (computer-output-microfilm) will also have enormous potential in the administration of information systems in the next few years.

For the noncampus degree program, one does not lose sight of the fact that one end of these new technologies is better and faster cooperation, coordination, and resource-sharing among libraries. Accelerated service via an interactive system has long been the aim of all those involved with library programs. The heart of the problem in nontraditional education will certainly be accessibility to information via networking, interlibrary loan, etc.

As libraries have grown in complexity, their bibliographic structure has also become far too complex to permit any single group (student-faculty) to cope with its apparatus without some library assistance. Herein are some dramatic opportunities in the immediate offing to the user: remote access to an on-line catalog, whether from a residence hall, office, other library, or home is

one immediate consideration. Access could be provided to the total system: an inquiry with regard to an entry in the catalog would permit the user to determine whether the book is in a collection, or on order, or in circulation, and with a few transactions to request its recall, if needed; to be notified of its receipt, if on order; to reserve the material and charge it out, if required; to request it by the interlibrary loan, if essential.

Similarly, remote access to an on-line catalog or data base provides the instantaneous bibliographic searches so desperately sought by the student to whom a manual search is loathsome.

Lastly, an essential ingredient in remote-user access to an on-line catalog is the self-help principle; browsing through subject files, with options presented to the user in terms of elusive cross references; browsing through the shelf list, akin to browsing through stacks; seeking out complicated or inaccurate entries in the author-title catalog; or being led, through permutation, to appropriate entries. All of these options would be available to the user at the user's (not the librarian's) convenience.

The possibilities in remote access are limited only by funding and the imaginations of information system planners.

4. Conclusions and Recommendations

It appears that the educational planners are not giving enough consideration to information systems and vice versa. The following suggestions are made, some of which can be clumped together:

1. Recognize that a change in one system or process necessitates change in another system.
2. Consider the possibility of libraries as credit-granting institutions (no one is as prejudiced against libraries as the classroom).
3. Include library representation in the planning stage of the noncampus degree program.
4. Include adequate funding from the beginning for all aspects of information resources in the program.
5. Develop library leadership such that the importance of the instructional role in librarianship is stressed.

6. Develop consortia of information systems at all levels: local, state, regional, federal.
7. Provide information about noncampus degree programs to as many libraries as possible (even sell instructional material in these libraries).
8. Provide training in and models of successful systems and replicate these in other regions.
9. Design special services for students who have proximity to the institution supplying the degree. Similarly, design special services for highly motivated/less motivated students.
10. Provide special services for faculty/mentors/tutors removed from central facilities of institution.
11. Disseminate information on and provide instruction to libraries on new technologies.

5. Further Study

Following the philosophy that one cannot design new systems satisfactorily without first investigating existing systems, a number of user studies could be recommended:

1. Where do noncampus degree students seek information and why? (Public? College? Special? Close to home? Better facilities? Better service?)
2. What types of materials are they actually using in connection with their studies? And why?
3. What methods of retrieval do the noncampus degree students employ? (Browsing? Reading list? Assignment?)
4. How do these students use a variety of media, and why? (Given a taped lecture or typed script, which would be preferred? Given portable reader and microform available now, or hard copy available in a few weeks, which would be preferred and why?)
5. What types of library instruction best lend themselves to the noncampus student (including new technologies and human resources)?
6. How would the resources of medium public libraries measure against supplementary reading lists of a sampling of programs?

In conclusion, the investigators would like to alert planners to some hypothesized dangers that may occur as this movement grows. First, educators have a proclivity to jump on bandwagons and attempt to replicate what some experimenters have done without taking necessary precautions. In the next decade, we may see a proliferation of noncampus programs because people see them as a cheap way to establish a higher education institution, a way of saving money for conventional institutions, a way to get students out of their hair, and the solution to other problems that may very well not be based on educational needs. This may bring about a whole series of noncampus higher education institutions with relatively low standards, which will, in fact, degrade the quality of those institutions that are attempting to do a superior job.

The second area of concern was picked up in many conversations with hardware merchants, or advocates of technological systems, that would like to see their ideas implemented. Once again, we see a group of people who would like to organize such institutions for purposes other than serving educational needs of students. The cable TV merchants see the possibility of delivering

canned programs to every home or at least many homes as a way of educating the population. Their interest is not education, but the sale of cable equipment. The technology advocates have sincere and honest beliefs that costs can be reduced and education enhanced by the use of technological systems to deliver educational programs to a broad population. A careful examination of their motives discloses an evangelical zeal to see technological systems in operation rather than concern about the education of the population in an information-based culture.

Another problem we encountered time and time again as we visited these institutions was the fact that planning was not broad or careful enough. Too often the plan was the dream of an administrator or a group of teachers who went ahead and instituted the program without consulting librarians, psychologists, or other people who could help them with their plans. Many times they neglected entirely the core problems of delivering instructional material.

One final concern is that as large states begin to develop nondegree education within the state university

complex, planning may be developed for very large units and incorporate institutionalized procedures rather than leaving the program diffused and dynamic as it seems to be at present.